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ABSTRACT

Two Canadian universities conducted an experiment in which preservice teachers used computer-mediated communication to describe and discuss critical incidents occurring during their practicum. Participants in the practicum shared their teaching experiences with peers, cooperating teachers, and university supervisors. Over 3 years, 6 different discussion groups occurred, with 37 student teachers, 6 supervisors, and 6 cooperating teachers participating. More than 900 message exchanges took place during their 2-6 week practicums. Because participants had home and school access to the Internet and used a discussion group setup on the university server, the messages were available to all. Preservice teachers shared all the difficulties they experienced and reacted to critical incidents reported by others. Researchers analyzed critical incidents reported via the computer-mediated communication to identify the main types of problems and concerns. Data classification and analysis was based on a framework with four commonplaces of learning (teacher, student, subject, and context) which considered the main relationship between those four elements. Results indicated that the most problematic situations involved student misbehavior or student-teacher relations. Preservice teachers seldom expressed concerns for themselves or for students with learning disabilities. Supervisors used various supervision strategies and often used more than one in the same intervention. Their interventions did not reflect a unique pattern of supervision. Over time, their interventions became more elaborated. (Contains 12 references.) (SM)

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Giving Professional Help to Preservice Teachers Through Computer-mediated Communication

Paper presented at the ATE meeting, Dallas, February 13-17, 1998.

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Educational research focusing on teachers' practice in real life settings can provide useful information on teachers' professional problems and concerns. This paper presents an experiment, which took place in two Canadian universities, UQTR (Université du Québec à Trois-Rivières) and UQAM (Université du Québec à Montréal), where preservice teachers used computer- mediated communication to describe and discuss critical incidents occurring during their practicum. It also analyzes the type of situations reported by student teachers and the strategies used by supervisors to support them.

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Electronic Networks As a Tool for Teacher Development

Teachers, especially newcomers to the profession, often experience isolation in their professional lives (Vale, 1992; Thompson & Hayes, 1993) and have little time and opportunity to develop networks for professional support (McMann, 1995). Cochran-Smith & Lyttle (1990) suggest that such networks should bring together different categories of teachers such as preservice teachers, in-service teachers and experienced teachers. As pointed out by Mason & Kaye (1993), group learning does not have to occur in real time or imply face-to-face relationship but can be supported by asynchronous communication. Therefore, electronic networks provide some interesting possibilities for teachers to communicate with each other and discuss aspects of their practice. Research suggests that this means of communication, besides the practical time-and-space related

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advantages it provides, encourages non-hierarchical dialogue as participants focus more on what is said than on who said it (Sproull & Kiestler, 1991). Harrington & Hattaway (1993) consider computer conferencing as a unique way for preservice or inservice teachers to develop reflective attitudes and skills towards their practice.

Electronic networks used to support teachers or teaching have been set up in recent years. In many cases, one of the objectives of these services was to encourage teachers' critical reflection (McIntyre & Tlusty, 1993; Thompson & Hayes, 1993; Harrington & Hattaway, 1993; Woodruff & Henessy, 1995). The experiment reported in this paper pursued professional development and research objectives. Electronic networks were used to support preservice teachers in their professional practice by supplying a suitable environment for group discussion and reflection-on-action. From a research perspective, the experiment, through content analysis of the messages exchanged, brings information on preservice teachers' professional concerns and on supervisors' practice.

Some research studied the strategies used by supervisors in communication situations different from the one examined in this study. Brady & Byra (1994) distinguish different styles of supervision (non-directive, collaborative, directive). Rust (1988) identifies the main strategies used by supervisors reacting to student teachers' diaries:

- reinforcement: the supervisor confirms the choices or actions of the student teacher;
- guidance: the supervisor gives advice regarding a particular situation;
- probing/clarifying: the supervisor questions the student teacher or asks her/him to think about some aspects of the problem.

Despite experiments done in the past on computer mediated communication, supervisors' strategies using this means to help student teachers are barely known.

The experiment pursued the following main aims :

- to analyze the type of incidents reported by student teachers through computer mediated communication;
- to examine the strategies used by university supervisors, through an electronic network, to support student teachers facing problematic situations.

Description of the Experiment

Students from two teacher training programs, one at the elementary school level (UQAM) and the other at the secondary school level (UQTR), participated in the project. During their practicum, the volunteer students were offered, in addition to their individual supervision in class, a chance to share their experiences with peers, cooperating teachers and university supervisors, on issues related to teaching.

Six different discussion groups have been set up since January 1995, which means that 37 student teachers from different teaching programs, 6 supervisors and 6 cooperating teachers participated on a voluntary basis in this program. The exchanges took place during their practicum, which lasted from 2 to 6 weeks. A total of more than 900 messages were exchanged. This paper analyzes the messages exchanged between student teachers at the secondary school level and supervisors.

Participants had access, at home or at school, to Internet and used a discussion group set up on the university server. Therefore, messages were available to all. Preservice teachers were invited to share all the difficulties they experienced. They were also asked to react to critical incidents reported by other participants. All the messages were stored for further analysis.

Nature of the Critical Incidents Reported

The critical incidents reported by preservice teachers via computer-mediated communication were analyzed to identify the main types of problems and concerns of the participants. The events described by the participants at UQTR were classified into different categories in order to point out their major difficulties and concerns. Two coders individually associated 353 critical incidents described by student teachers at UQTR to a word or expression characterizing the incident. Incidents were then classified in broader categories.

Classification and analysis of the data collected were based on a framework developed from two sources. Schwab (1973) identifies four commonplaces of learning: the teacher, the student, the subject and the context. Although these commonplaces cover all the major elements of a classroom situation, associating an incident with one of these can be difficult because most incidents involved more than one element. Donnay and Charlier (1990) propose a framework for analyzing pedagogical situations that take into account the relationship between major components of the teaching/learning situation. The framework we adopted for classifying the incidents uses Schwab's four commonplaces and considers the main relationship between these elements. Based on the main focus of the incident description done by the preservice teacher, each situation was associated with one category. The following distribution was obtained:

- incidents centered on teacher: 6 (1.7%)
- incidents centered on student: 115 (32.6%)
- incidents centered on subject matter: 0
- incidents centered on context: 16 (4.5%)
- incidents centered on teacher-student relationship: 72 (20.4%)
- incidents centered on teacher-subject matter relationship: 66 (18.7%)

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- incidents centered on teacher-context relationship: 55 (15.6%)
- incidents centered on student-subject matter relationship: 18 (5.1%)
- incidents centered on student-context relationship: 5 (1.4%)
- incidents centered on subject-context relationship: 0

The analysis gives information on the preservice teachers' main types of difficulties and main concerns. Incidents focusing on students' behavior are the most frequent (32.6%). Furthermore, incidents centered on students or preservice teacher-student relationship account for more than half of the incidents reported (53%). These incidents reported mainly problematic relationships with one student, inadequate behavior of a group of students and undesirable student attitudes such as their lack of motivation or attention.

Although, 18.7% of the situations reported were classified under the teacher-subject relationship, most of them dealt with the choice of adequate or motivating teaching strategies. Time management and student assessment are also topics of concerns for student teachers. Incidents in this category rarely related to specific subject or involved how to teach a particular topic.

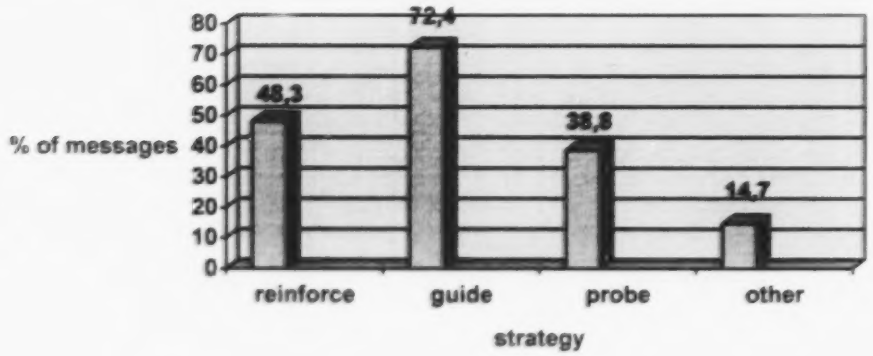
Student's learning difficulties do not appear to be a major concern for the participants as indicated by the few incidents classified under student-subject relationship (5%). Incidents focusing mainly on preservice teachers themselves were very scarce (1.7%). This result contrasts with the high percentage, as reported earlier, of situations focusing on students.

Supervisors' Strategies

For each session, we compiled, for each supervisor, the frequency of use of the different strategies identified by Rust. More global compilations were then made to establish the frequency and percentage of use of each strategy for each session and for all sessions.

The bar chart below indicates the frequency of the strategies used by supervisors:

Fig. 1
Supervisors' strategies



The analysis of supervisors' interventions first shows that:

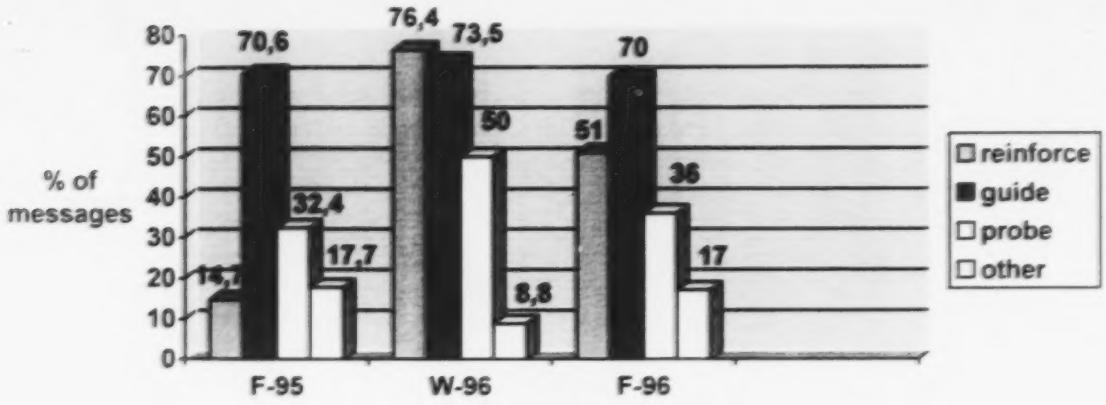
- the guiding strategy is the most common (72% of all analyzed messages refer to it)
- the reinforcement and probing strategies are also very frequent (respectively 48% and 39%)

The results also show that most of the time (55% of all cases) supervisors resort to more than one strategy in the same message. Some messages even combine all three strategies in one intervention.

An extensive analysis shows that these results differ from one session to another. The next graph shows the frequency of the three main strategies chosen for each session (Fall 95, Winter 96 and Fall 96).

Fig.2

Evolution of supervisors strategies



A comparison of the messages sent during the first session with those sent during the subsequent sessions shows how the supervisors' strategies evolved:

- The reinforcement strategy was more used than at the beginning. Reinforcement consists more in finding interesting aspects in the student teacher's analysis than in approving the student teacher's action in a problematic situation.
- Messages combining multiple strategies were more frequent. This was noticeable for all supervisors. With the exception of the first session, interventions using multiple strategies accounted for most of the messages sent by each supervisor.

The way the different strategies themselves are used evolved. While the messages sent during the first session often suggest specific solutions, some of the advice given in the later sessions focus more on the development of reflective abilities than on specific solutions. They are also more complete and refer more to theory.

Discussion and conclusion

Some conclusions on the use of computer mediated communication for supporting student teachers can be drawn from this experiment. The feedback from participants was

positive: they see computer mediated communication as an interesting way to share their experiences and to obtain professional support.

The analysis of the different critical incidents reveals that most problematic situations involved student misbehavior or the student/teacher relations, while preservice teachers' concerns for students with learning disabilities, or for themselves as teachers, were seldom expressed. From a professional development perspective, it is important to ensure that preservice teachers think more about students' learning disabilities and that they analyze their own behavior, feelings and attitudes as teachers.

This study shows that supervisors use varied strategies, and often use more than one strategy in the same intervention. The supervisors' interventions do not reflect a unique pattern of supervision. Some interventions suggesting to student teachers how to act can be associated with a directive model of supervision while other interventions correspond more to a collaborative model where the student teacher and the supervisor share their thoughts and queries about the difficulties experienced.

The evolution observed in the strategies used by supervisors suggests that, with time, supervisors' interventions become more elaborated. These observations can be explained by the fact that discussion groups allow supervisors to be aware of the student teachers reactions to their comments and the strategies used by other supervisors. It is possible for supervisors to improve their own strategies by being aware of the strategies used by their colleagues and by progressively adopting strategies that foster communication. This dynamic sharing environment can definitely contribute to the enhancement of the supervision strategies.

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